EXHIBIT E

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IN THE UNITED STATES DISTRICT COURT
FOR THE NORTHERN DISTRICT OF CALIFORNIA
SAN FRANCISCO DIVISION

IN RE: CATHODE RAY TUBE (CRT)	)	
ANTITRUST LITIGATION	)	
	)	Master File No. CV-07-5944-SC
________________________________	)	MDL No. 1917
	)	
This document relates to:	)	Hon. Samuel Conti
ALL INDIRECT PURCHASER ACTIONS	)	
______________________________________	)	

Expert Report of
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include the size of tube, the aspect ratio of the tube, the curvature of the tube, the resolution of the tube, and other electrical properties. Additionally, some CRTs are sold as "bare" tubes, which do not include a deflection yoke[11], while some CRTs include a deflection yoke as part of the assembly. Such CRTs are often referred to "integrated tube components."

B. The distribution channels for CRT products are long and complex.

12. Consumers obviously do not purchase standalone CRTs, but only as part of finished television sets or computer monitors. Therefore, the CRTs subject to the alleged collusion move in a long supply and distribution chain before they reach the ultimate consumers who purchase finished products. CRT manufacturers sell CPTs and CDTs to product manufacturers sometimes directly and sometimes through tube distributors. These finished product manufacturers in turn sell televisions and computer monitors to retailers, sometimes directly and sometimes through distributors. The consumers who are members of the indirect purchaser class then purchase the relevant products from retailers. An additional complication in the vertical chain of production and distribution arises because many of the Defendants in this case are vertically integrated into the production of televisions and/or monitors, while others have affiliates that distribute tubes to third-party manufacturers of finished products.

13. The direct purchasers of CRTs – that is, finished product manufacturers – comprise a heterogeneous group.[12] It includes:

- **Original Equipment Manufacturers** (OEMs), who sell finished televisions under their own brand. Some OEMs design and manufacture the finished CRT product, while others contract some portion of the manufacturing to contract manufacturers. Television

11. A "deflection yoke" is a set of coils sitting outside of the tube providing an electromagnetic field, and which help aim the beam of electrons.
12. I note that some direct purchases of CRTs are made by tube distributors, which in turn sell to finished product manufacturers.

OEMs include Sharp and Sanyo; OEMs who manufacturer computer monitors include Dell and Hewlett-Packard.

- **Contract manufacturers** manufacture finished CRT products for other firms which sell the finished products under their own brand names. These firms are sometimes called **Electronics Manufacturing Services** (EMSs) or **Original Design Manufacturers** (ODMs). I understand the primary distinction between these types of firms is that ODMs typically manufacture finished products using their own intellectual property for the design of the product, while EMSs do not. Examples of contract manufacturers include Compal and BenQ.

14. Finished televisions and computer monitors are sometimes sold to independent distributors for further resale to retailers. Such distributors include firms such as TechData and Ingram Micro. Retailers, including physical retailers such as Best Buy and Wal-Mart, or online retailers such as Amazon.com, can purchase finished products from either OEMs (who may be vertically integrated affiliates of the Defendants) or through product distributors, and in turn sell the CRT-containing televisions and computer monitors to the end consumers that are included in the indirect purchaser class. An example of the complexity of the CRT supply chain is represented graphically in Figure 1 below.

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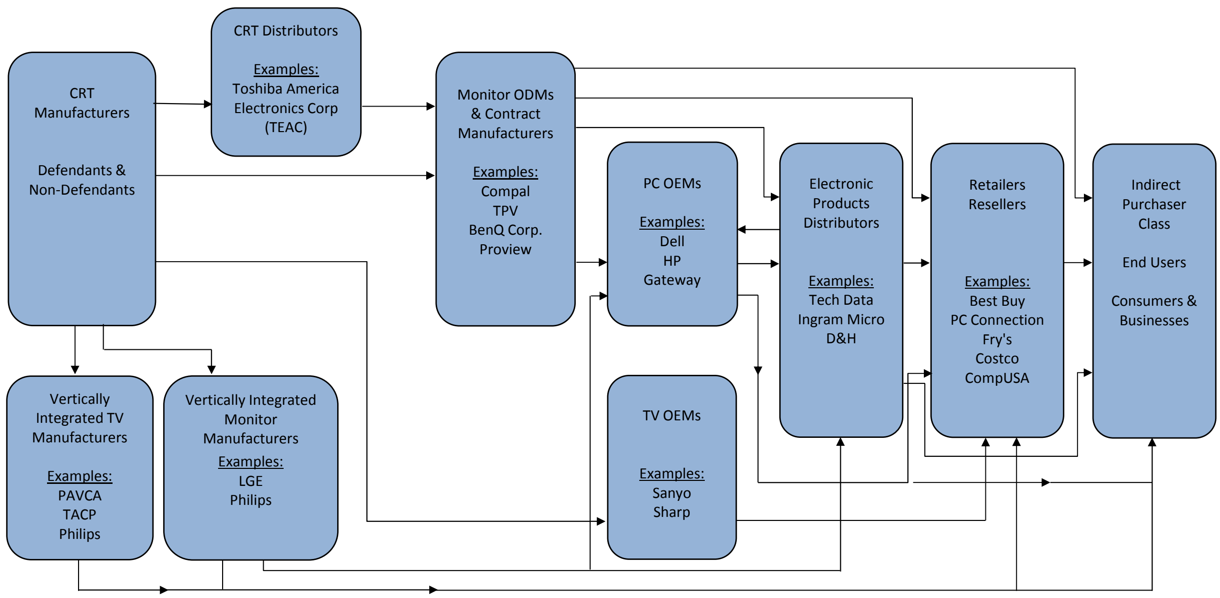
Figure 1

Distribution Channels for CRTs



Source: Willig Class Cert Report, Exhibit 23.

C. The CRT industry experienced many changes during the period of alleged collusion.

15. During the period of alleged collusion, the CRT industry experienced many changes, which in turn likely affected the amounts of the alleged overcharges and the pass-through rates on specific products during specific time periods. Most significantly, competition from LCD and plasma technologies reduced the demand for CRTs. Throughout the 2000s, the share of North American sales of televisions and computer monitors that were manufactured using CRTs declined, although at different rates. As shown in Figure 2 below, for both televisions and computer monitors, the share of North American sales accounted for by CRT containing products declined from over 90 percent at the beginning of 2001 to essentially nothing by the end of 2009. However, while less than 10 percent of computer monitors sold in North America used CRT technology by the end of 2006, roughly 40 percent of televisions at that time contained CRTs.